

Labour Market Institutions and their Effect on Labour Market Performance in the New EU Member Countries

KAMILA FIALOVÁ
ONDŘEJ SCHNEIDER

CESIFO WORKING PAPER NO. 2421
CATEGORY 4: LABOUR MARKETS
OCTOBER 2008

An electronic version of the paper may be downloaded

- *from the SSRN website:* www.SSRN.com
- *from the RePEc website:* www.RePEc.org
- *from the CESifo website:* www.CESifo-group.org/wp

Labour Market Institutions and their Effect on Labour Market Performance in the New EU Member Countries

Abstract

This article focuses on the role of labour market institutions in explaining different labour market developments in European countries, with a special attention to the new European Union member countries. This may allow us to analyse effects of various institutional setups and of their changes on major labour market indicators. We aim at complementing several studies from the late 1990's by using more recent data that allow us to compare institutional setups from the mid 1990's and early 2000's both in "old" and "new" EU member states. We estimate effects of labour market institutions on various performance indicators (unemployment, long-term unemployment, employment, activity rate). Our results confirm that high taxes increase unemployment, while active labour market policies tend to reduce it. We also show that stricter employment protection, higher taxes and larger economic burden represented by the minimum wage decrease employment and activity rate. Moreover, statistical tests indicate that there is a difference in the institutional effects between "old" and "new" EU members.

JEL Code: J08, J51, K31.

Keywords: labour market, unemployment, European Union, labour market institutions.

Kamila Fialová
Institute of Economic Studies
Charles University Prague
Opletalova 26
11000 Prague
Czech Republic
kfialova@email.cz

Ondřej Schneider
Institute of Economic Studies
Charles University Prague
Opletalova 26
11000 Prague
Czech Republic
schneider@fsv.cuni.cz

This paper was written with the support of the Grant Agency of Charles University, Grant No. 2199/2007 ("Analysis of the Impact of the Selected Social Policy Instruments on the Czech Labour Market and a Broad International Comparison"). The authors would like to thank Jan Winiecki for encouragement; all remaining errors are the authors' responsibility.

Introduction

Labour markets remain at the centre of both academic research and policy discussion in most advanced economies. Labour markets represent the most diverse, but arguably the most important segment of complex market structures that characterize modern economies. Indeed, different performance of labour markets in continental Europe and in the Anglo-Saxon countries was credited with widening the gap between the two groups of countries in the 1990's and early 2000's.

However, diversity of labour markets makes them extremely difficult to analyze. Labour markets are subject to macroeconomic shocks, microeconomic structures and various regional or national “customs” that are often difficult to describe, or even quantify. Until the seminal OECD study (OECD, 1994), most analyses concentrated on macroeconomic approach to labour market analysis. The OECD report argued that labour market institutions are much more important and their proper setup might explain differences among major developed countries. While intellectually appealing, the “institutional approach” to labour market analysis is not without problems (see e.g. Heckman, 2007). Effect of many institutional arrangements is unclear both theoretically and empirically. Moreover, institutions are not homogenous across countries, i.e. the same institutional design may have different effects in different countries.

This paper focuses on the role of labour market institutions in explaining different labour market developments in European countries, with a special attention to the new European Union member countries. Differences in labour market developments in former and new EU member states increased since the late 1990s; old region improved its labour market performance while new region rather declined. New EU members' labour markets have been exposed to severe shocks and institutional reforms. This allows us to disentangle effects of various institutional setups and their changes on major labour market indicators. We follow several studies from the late 1990's (Nickell, 1997; Riboud et al., 2001; Cazes and Nesporova, 2003), but more recent data allow us to include dynamic changes in institutional setups from the late 1990's to early 2000's both in “old” and “new” EU member states.

In our analysis we rely mostly on the OECD data, as no better dataset with unified methodology covering labour market institutions is available. Out of all the new EU members, OECD dataset includes the Czech Republic, Hungary, Poland and Slovakia only. Overall, we use 19 countries sample that consists of only these four “new” member countries (hereafter

“NMS”) and fifteen “old” members (Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Netherlands, Austria, Portugal, Finland, Sweden, United Kingdom; Luxembourg is missing, non-EU Norway is added). Thus, given the limited amount of data available, our results should be taken carefully.

The article is organised as follows. In the first chapter, we briefly sketch labour market performance in European countries and compare “old” and “new” EU members’ performance. In the following chapter, we overview main theoretical arguments about the labour market institutions’ role. The third chapter discusses major institutional indicators and their developments in the recent years. We argue that the European institutional setups are converging, for better or worse. The fourth chapter then presents an econometrical analysis of the labour market institutions’ effects. We run four separate regressions, estimating effects of labour market institutions on various performance indicators (unemployment, long-term unemployment, employment, activity rate). Our results confirm that high taxes increase unemployment, while active labour market policies tend to reduce it. We also show that stricter employment protection, higher taxes and larger economic burden represented by the minimum wage decrease employment and activity rate. Moreover, simple statistical tests indicate significant difference between “old” and “new” EU members as far as institutional effects are concerned, particularly in case of employment and activity rate. We are, however, limited by data availability so we cannot run separate regressions for the two groups to identify the differences quantitatively. The final part discusses potential conclusions from our research and their limits.

1. Labour market developments in the new member states in the European context

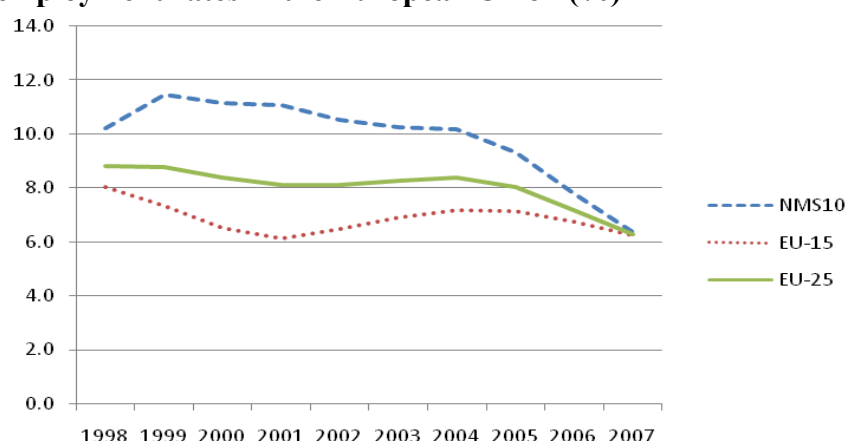
Labour markets in the new EU member states were under close scrutiny throughout the 1990’s. Many authors (Nesporova, 2002; Lechner and Wunsch, 2006) are rather critical of the labour market performance. Most authors, however, concentrate on macroeconomic policies, blaming large negative shocks for increasing unemployment in these countries. Nesporova (2002), for example, devotes only several paragraphs to the discussion of institutional factors and is rather sceptical vis-à-vis their effects on labour market developments.¹

As figure 1 and table 1 below illustrate, NMS10² countries witnessed a substantial increase in the unemployment rate between 1998 and 2002 when the average unemployment in the

¹ Later research by Cazes (2002) and Cazes and Nesporova (2004) indicates that at least some labour market institutions matter.

NMS10 peaked at almost 12%. It fell since then, rather dramatically particularly after 2005. The EU-15 unemployment rate is much more stable: it hovered around 7% in the 1998-2007 period.³ During that period, however, several EU countries cut their unemployment rates significantly (Spain, Ireland, Finland), while it increased in others (Germany, Portugal). In 2007, differences among the two groups of countries almost disappeared – see Figure 1.

Figure 1: Unemployment rates in the European Union (%)



Source: Eurostat

Note: 1998, 1999 - data on Malta and Cyprus not available, NMS average covers 8 remaining countries only.

Labour markets' performance in the EU was rather robust in 2005-2007, as the EU economy gathered speed—in some new member states (and also in Ireland and Spain) the labour force expanded by 2-4 percentage points. Following some deregulation measures, particularly in Spain, two thirds of new jobs were generated in part-time jobs. In several countries (Denmark, Ireland, Cyprus, Austria, Luxembourg, the Netherlands and the Baltic countries) unemployment hovered around 4%. Poland and Slovakia suffered from highest unemployment rates (10-11%), followed by large “old” member countries as Germany, France, Spain with unemployment rates around 8%.

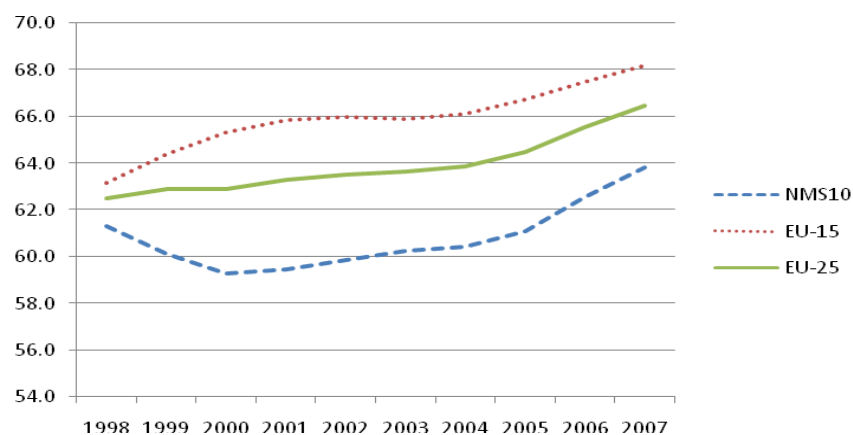
Employment rates, perhaps a more appropriate measure of the labour market efficiency, increased by 1.6 percentage points in the EU-25 between 1999 and 2005, but the growth was concentrated among the “old” members where employment rose by 2.4% while “new” members went up by 1% only (see figure 2). The employment jumped by almost 10 percentage points in Spain. At the same period, employment rather stagnated in Poland and Hungary which experience, together with Italy and Malta, very low employment rates of

² Ten countries that joined the EU in 2004 are referred to as NMS10 in this paper. They are Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

³ Long-term unemployment exhibited the same trends in this period, differences between these two groups of countries were even more pronounced.

about 57%. Employment rates improved considerably among Baltic States after 2005 and pushed up the whole NMS10 average significantly.

Figure 2: Employment rates in the European Union (%)



Source: Eurostat

Note: 1998, 1999 - data on Malta and Cyprus not available, NMS average covers 8 remaining countries only.

Table 1. Unemployment and employment in NMS10, EU-15 and EU-25, 1999-2007

| | Unemployment rate (%) | | | | | Employment rate (%) | | | | |
|-------------|-----------------------|------|------|------|------|---------------------|------|------|------|------|
| | 1999 | 2001 | 2003 | 2005 | 2007 | 1999 | 2001 | 2003 | 2005 | 2007 |
| Czech | 8.6 | 8.0 | 7.8 | 7.9 | 5.3 | 65.6 | 65.0 | 64.7 | 64.8 | 66.1 |
| Estonia | 11.3 | 12.4 | 10.0 | 7.9 | 4.7 | 61.5 | 61.0 | 62.9 | 64.4 | 69.4 |
| Cyprus | : | 3.8 | 4.1 | 5.3 | 3.9 | : | 67.8 | 69.2 | 68.5 | 71.0 |
| Latvia | 14.0 | 12.9 | 10.5 | 8.9 | 6.0 | 58.8 | 58.6 | 61.8 | 63.3 | 68.3 |
| Lithuania | 13.7 | 16.5 | 12.5 | 8.3 | 4.3 | 61.7 | 57.5 | 61.1 | 62.6 | 64.9 |
| Hungary | 6.9 | 5.7 | 5.9 | 7.2 | 7.4 | 55.6 | 56.2 | 57.0 | 56.9 | 57.3 |
| Malta | : | 7.6 | 7.6 | 7.2 | 6.4 | : | 54.3 | 54.2 | 53.9 | 55.7 |
| Poland | 13.4 | 18.3 | 19.7 | 17.8 | 9.6 | 57.6 | 53.4 | 51.2 | 52.8 | 57.0 |
| Slovenia | 7.3 | 6.2 | 6.7 | 6.5 | 4.9 | 62.2 | 63.8 | 62.6 | 66.0 | 67.8 |
| Slovakia | 16.4 | 19.3 | 17.6 | 16.3 | 11.1 | 58.1 | 56.8 | 57.7 | 57.7 | 60.7 |
| Belgium | 8.5 | 6.6 | 8.2 | 8.5 | 7.5 | 59.3 | 59.9 | 59.6 | 61.1 | 62.0 |
| Denmark | 5.2 | 4.5 | 5.4 | 4.8 | 3.8 | 76.0 | 76.2 | 75.1 | 75.9 | 77.1 |
| Germany | 8.2 | 7.6 | 9.3 | 10.7 | 8.4 | 65.2 | 65.8 | 65.0 | 66.0 | 69.4 |
| Ireland | 5.7 | 4.0 | 4.7 | 4.4 | 4.6 | 63.3 | 65.8 | 65.5 | 67.6 | 69.1 |
| Greece | 12.0 | 10.7 | 9.7 | 9.9 | 8.3 | 55.9 | 56.3 | 58.7 | 60.1 | 61.4 |
| Spain | 12.5 | 10.3 | 11.1 | 9.2 | 8.3 | 53.8 | 57.8 | 59.8 | 63.3 | 65.6 |
| France | 10.4 | 8.3 | 9.0 | 9.2 | 8.3 | 60.9 | 62.8 | 64.0 | 63.9 | 64.6 |
| Italy | 11.0 | 9.1 | 8.5 | 7.7 | 6.1 | 52.7 | 54.8 | 56.1 | 57.6 | 58.7 |
| Luxembourg | 2.4 | 1.9 | 3.8 | 4.6 | 4.1 | 61.7 | 63.1 | 62.2 | 63.6 | 64.2 |
| Netherlands | 3.2 | 2.2 | 3.7 | 4.7 | 3.2 | 71.7 | 74.1 | 73.6 | 73.2 | 76.0 |
| Austria | 3.9 | 3.6 | 4.3 | 5.2 | 4.4 | 68.6 | 68.5 | 68.9 | 68.6 | 71.4 |
| Portugal | 4.5 | 4.1 | 6.4 | 7.7 | 8.1 | 67.4 | 69.0 | 68.1 | 67.5 | 67.8 |
| Finland | 10.2 | 9.1 | 9.0 | 8.4 | 6.9 | 66.4 | 68.1 | 67.7 | 68.4 | 70.3 |
| Sweden | 6.7 | 4.9 | 5.6 | 7.4 | 6.1 | 71.7 | 74.0 | 72.9 | 72.5 | 74.2 |
| United | 5.9 | 5.0 | 5.0 | 4.8 | 5.3 | 71.0 | 71.4 | 71.5 | 71.7 | 71.3 |
| NMS10 | 11.5 | 11.1 | 10.2 | 9.3 | 6.4 | 60.1 | 59.4 | 60.2 | 61.1 | 63.8 |
| EU-15 | 7.4 | 6.1 | 6.9 | 7.1 | 6.2 | 64.4 | 65.8 | 65.9 | 66.7 | 68.2 |
| EU-25 | 8.8 | 8.1 | 8.2 | 8.0 | 6.3 | 62.9 | 63.3 | 63.6 | 64.5 | 66.5 |

Source: Eurostat

Note: 1998, 1999 - data on Malta and Cyprus not available, NMS average covers 8 remaining countries only.

The Lisbon Agenda of the EU, an ambitious programme aimed at increasing the EU's competitiveness, stressed the importance of labour market performance and urged the EU

countries to reform their labour markets. The EU policy seems to be captured by the “flexicurity” buzzword that is supposed to combine flexibility and security. The prime example of flexicurity is Denmark and its “Danish Golden Triangle” where flexible labour market and generous social security system are supported by active labour market policies.

Indeed, the OECD ranked Denmark as the most intense reformer of labour markets, followed by the Netherlands and Finland. Out of the EU-25 that are the OECD members as well, the slowest reformers are squarely among the “new” member countries: the Czech Republic, Hungary and Poland. The new member states score particularly poorly in working-time flexibility—see the European Commission (2005). On the other hand, as we argue in the following chapter, the new EU member states have more liberal labour market institutions in other perspectives.

It may be thus argued that there are several groups of countries within the EU. There are reformers among “old” members, led by Denmark, Ireland and other small countries. They typically have low unemployment rates, high activity rates, but also high social security expenditures, high taxes and large part of work force in “augmented” jobs either created or subsidized by governments. The other group, large “old” members—Germany, Italy, and France—are inconsistent in their reform efforts and suffer from high unemployment and high social expenditures.⁴ Among the new members, the three Baltic States are the keenest reformers, even though their activity and employment rates are still low. At the same time, the central Europe trio of Hungary, the Czech Republic and Poland is not adapting their labour markets to changing environment. The Czech Republic benefits, so far, from relatively high activity rates, but Poland and Hungary are suffering from low activity.⁵

2. Labour market performance and the role of institutions

Diversity of labour market institutions is often perplexing. While some are intuitively clear, others are difficult to define (social dialogue, health and safety rules, work councils, etc.). Countries differ extensively in their use of labour market institutions: Germany and Sweden are examples of tightly regulated labour markets where institutions’ predominant concern is protection of existing jobs. Anglo-Saxon countries are more often associated with labour institutions that rely on markets and favour job creation (and destruction) rather than protection. The evident unemployment gap between the (continental) Europe and US led

⁴ Germany scored better in 2006 and 2007 as it reformed its labour market rather dramatically.

⁵ For a more detailed discussion of transition labour markets performance, see Flek and Vecernik (2005).

many observers to argue that the more flexible US institutions were at the root of the superior performance.⁶

Unfortunately, economic theory does not provide clear answers as what labour market institutions' effects may be. If we assume that bargaining on labour markets is efficient, firms maximize their profits and market institutions do not affect aggregate efficiency.⁷ More realistically perhaps, other models assume that institutions may change the total productivity. Trade unions increase insiders' wages, firms reduce employment and labour reallocates to shadow (or non-unionized) sectors with lower productivity—total productivity then falls and distribution effects are unclear, as some workers gain, some lose.⁸

On the other hand, some institutions may improve market outcomes if they move market closer to the “ideal”. Increasing trust between workers and managers/owners may increase workers' willingness to accept wage cuts during economic hardship (Freeman and Lazear, 1995). Olson (1990) argued that even centralized wage bargaining in a small open economy may improve total outcome, as central trade unions would internalize the negative externalities from industry level bargaining. Indeed, Teulings and Hartog (1998) showed that wages in countries with centralized bargaining reflected economic conditions much better than wages in the (decentralized) US labour market.

Therefore, one may choose to argue that labour market institutions do not change, decrease or increase efficiency of the labour markets. Since the mid 1990's the discussion of labour market institutions was dominated by the strong claim by Nickell (quoted in Nickell et al., 2005) who argued that labour market institutions and their changes may explain changes in the OECD countries unemployment. This claim was later undermined by studies by Blanchflower (2001) or Baker et al. (2005) who argued that these results are sensitive to model specification—adding additional years, countries or indicators eliminated significance of Nickell's estimators.

To complicate analysis even further, one has to keep in mind that institutions evolve over time and their effects may change as well. Freeman (2007) argues that even institutions' effects on labour markets may change, so the same institutions may have different effects in different countries or in different periods. The institutions adapt to the country's general traditions and

⁶ See Freeman (2007) for a detailed discussion of labour market indicators.

⁷ They may affect, however, distribution of profits. Most labour market institutions aim at increasing the labour share of the total profit. For example, minimum wages, employment protection laws, collective bargaining increase payouts to workers after the implementation. While the total product remain unchanged (firm is efficient), the labour share was increased.

habits and those institutions undermining countries' economic goals are eventually abandoned or ignored, so we do not observe a random set of institutions across countries. Calmfors and Drifill (1988) showed that unemployment was highest in countries with industry-based collective bargaining—the famous inverse U hypothesis. However, this relationship all but disappeared in the 1990's, as acknowledged by the OECD Employment Outlook in 2004. Therefore, medium level of bargaining might have been particularly inefficient in the 1980's but as labour market participants in countries with this bargaining system suffered from higher unemployment, the nature of bargaining might have changed. Lindbeck (1996) makes a similar point, arguing that welfare system may have important dynamic effects that may become apparent only after habits and social norms adapt.

3. Institutions and their effects

The institutional barriers to the functioning of the labour market and its rigidity are not easily quantifiable, as discussed above. Recent theoretical and empirical studies usually use a set of institutional indicators, as there is not any single measure of institutional set-up. These “institutional environments” are compared to labour market performance to assess the real labour market flexibility/rigidity—see e.g. Nickell (1997), Riboud et al. (2001), Blanchard and Wolfers (2000), Cazes and Nesporova (2003), ILO (2001). We adopt the same approach and we focus on five institutional areas: employment protection legislation, wage setting framework (trade unions and minimum wage), system of taxation and labour market policies.⁹

Employment protection legislation

The aim of employment protection legislation (EPL) is to improve workers' employment conditions and enhance their welfare. The regulation refers to legal framework governing conditions of hiring and firing. It mainly restricts the employers' freedom to dismiss workers and thus reduces the flows into, but also out of, unemployment.

Employment protection, beside its effect on workers welfare resulting from higher job security, stabilizes the employer-employee relationship and might stimulate the firm's investment in human capital of workers, leading to a higher productivity. On the macroeconomic level, it might smooth labour market adjustment to adverse shocks. On the

⁸ The same holds for minimum wage or employment protection laws.

⁹ The list is not exhaustive as there are many factors influencing the labour market flexibility. Blanchard and Wolfers (2000) emphasise the importance of adverse economic shocks and their interaction with labour market institutions for explaining the unemployment dynamics and differences among the countries. Riboud et al. (2001) underline the influence of macroeconomic and structural reforms on labour market performance of CEE countries in 1990s.

other hand, there might be found significant negative side effects on worsening the firms' flexibility in changing economic conditions. Moreover, it widens the distance between the labour market "insiders" and "outsiders" (Layard et al., 1991) and in this sense might contribute to labour market rigidity and higher unemployment.¹⁰ The overall net effect of EPL is thus ambiguous and concerns employment, unemployment, labour costs and productivity. Empirical literature gives rather mixed evidence of employment protection consequences for labour market performance (see OECD, 1999). Generally, there is no clear effect of stricter EPL on overall unemployment, but it may increase its duration and change its composition.

We follow the OECD methodology (1999, 2004) for measuring the strictness of employment protection. The OECD developed a system of indicators, including a single overall composite indicator. As many as twenty two measures describing various aspects of EPL, covering regular and temporary contracts and collective dismissals, were aggregated into a summary indicator using a set of weights. EPL index 1 covers conditions of regular and temporary contracts, EPL index 2 covers in addition terms of collective dismissals. Indices reach the values from 1 to 6, low index indicates flexible legislation and liberal hiring and firing environment, while stricter protection is reflected in a higher value of the index.

Overall situation in European countries is shown in table 2. As can be seen, NMS do not constitute a homogeneous group in terms of EPL strictness, especially in 1998. Slovakia had the toughest legislation of the four countries, but there was a significant decrease and it fell under the average of the NMS until 2003. Slight increase in EPL strictness is evident in case of Hungary and Poland, but Hungary, together with Slovakia, still remains more liberal in terms of EPL strictness, while the Czech Republic and Poland are being less liberal. Differences among NMS group tend to decrease in time.

The EPL strictness varied more among the "old" members; however, it has converged somewhat in 2003 as well.¹¹ Southern European countries have the toughest regulation while the rules are more relaxed as one moves north; English speaking countries exhibit the most liberal EPL. Generally EPL in NMS is not as strict as in the other group—the average EPL index was significantly lower in both periods. Also the decrease in cross-country differences

¹⁰ More distinct impact can be expected for long-term unemployment. On the other hand, short-term unemployment might be decreased by reducing the inflows to unemployment.

¹¹ Employment protection has been relaxed in OECD countries since 1990s according to recommendations of the OECD Jobs Strategy (1994), but the changes applied to regulation of temporary contracts mainly, leaving the regular employment protection unchanged (Brandt et al., 2005).

in time was larger among the NMS (coefficient of variation fell by 50% in NMS, while there was only a slight decrease in the “old” states).

Table 2. *Employment protection legislation in the selected European countries*

| | EPL1 | | EPL2 | |
|--|-------------|-------------|-------------|-------------|
| | 1998 | 2003 | 1998 | 2003 |
| Belgium | 2.15 | 2.18 | 2.48 | 2.50 |
| Czech Republic | 1.90 | 1.90 | 1.94 | 1.94 |
| Denmark | 1.42 | 1.42 | 1.83 | 1.83 |
| Germany | 2.46 | 2.21 | 2.64 | 2.47 |
| Greece | 3.54 | 2.83 | 3.49 | 2.90 |
| Spain | 2.93 | 3.05 | 2.96 | 3.07 |
| France | 2.98 | 3.05 | 2.84 | 2.89 |
| Ireland | 0.93 | 1.11 | 1.17 | 1.32 |
| Italy | 2.70 | 1.95 | 3.06 | 2.44 |
| Hungary | 1.27 | 1.52 | 1.54 | 1.75 |
| Netherlands | 2.12 | 2.12 | 2.27 | 2.27 |
| Austria | 2.21 | 1.94 | 2.38 | 2.15 |
| Poland | 1.49 | 1.74 | 1.93 | 2.14 |
| Portugal | 3.67 | 3.46 | 3.66 | 3.49 |
| Slovakia | 2.38 | 1.42 | 2.53 | 1.60 |
| Finland | 2.09 | 2.02 | 2.18 | 2.12 |
| Sweden | 2.24 | 2.24 | 2.62 | 2.62 |
| United Kingdom | 0.60 | 0.75 | 0.98 | 1.10 |
| Norway | 2.69 | 2.56 | 2.72 | 2.62 |
| NMS average | 1.76 | 1.65 | 1.98 | 1.86 |
| „old“ EU average | 2.32 | 2.19 | 2.49 | 2.39 |
| NMS coefficient of variation | 0.28 | 0.13 | 0.21 | 0.12 |
| „old“ EU coefficient of variation | 0.37 | 0.34 | 0.30 | 0.26 |

Source: OECD (1999, 2004)

Minimum wage setting

Policies aimed at increasing low incomes from employment are nowadays a common practice in almost all the developed countries in the world. Minimum wage might be either statutory, established by the government, or as an extension of collective bargaining agreements.¹² Introduction of minimum wage might pursue different goals. Its advocates argue mainly by decreasing poverty, reducing income disparities, protection and motivation of low productive workers. However, minimum wage might not be an effective tool to promote these goals as it can increase incomes only of those individuals who work. Moreover, minimum wage might represent a large burden for employers, who might decide to fire workers, or not to employ them in the first place, whose productivity would not reach the minimum wage. To the extent in which these negative consequences would occur, potential benefits for working poor would be limited.

Minimum wage is a controversial instrument of labour market policies. Economic theorists have not reached a broad consensus regarding its consequences so far. However, it is usually generally accepted that although it might have some positive impacts on motivation to

¹² Many „old“ European countries don’t have legally binding minimum wage, but usually there exist an effective minimum wage determined by collective bargaining (Austria, Italy, Germany, Denmark, Sweden).

productivity increase among low-paid workers (Stigler, 1946; Cahuc a Michell, 1996), as a motivation device in efficient wages framework (see Rebitzer and Taylor, 1995, or Manning, 1995), or in case of a monopsony, there exists a threshold, over which the negative effects of minimum wage prevail. Minimum wage increases the unemployment and causes economic losses in terms of economic efficiency then. The effect is stronger for particular groups of workers with the lowest productivity. This situation is to certain extent confirmed by existing empirical research. For a summary of empirical research results on this issue see e.g. Brown et al. (1982) or OECD (1998).

Situation in the NMS and other European countries is given in table 3. All the four NMS have introduced legally binding minimum wage. The highest real minimum wage value (measured in purchasing power standard—PPS value of the wage) can be found in the Czech Republic; on the other hand, Slovakia has the lowest level. Still, the differences among countries are not so marked. There is a clear trend in increasing the minimum wage tariffs. Nevertheless, the minimum wage levels are still significantly lower than in the “old” member states (roughly 40% of their level in 2004).¹³ As to the real economic burden represented by the minimum wage, it might be measured by a relative share of minimum wage on median wage in the economy. Although relatively low, minimum wage represents a significant proportion of median wage in the NMS, thanks to a relatively lower overall wage level. The share was roughly 40-50% in 2003 and there was an evident increase between the examined years, with the exception of Slovakia. By raising its level, the differences between the NMS and the other group almost disappeared in 2003.

Table 3. Minimum wage in the selected European countries

| | Hourly real minimum wage, USD (PPS) | | Minimum wage/ median wage | |
|-------------------------|-------------------------------------|-------------|---------------------------|-------------|
| | 2000 | 2004 | 1999 | 2003 |
| Belgium | 6.54 | 6.54 | 0.49 | 0.47 |
| Czech Republic | 1.63 | 2.55 | 0.26 | 0.37 |
| Greece | 3.39 | 3.58 | 0.51 | 0.49 |
| Spain | 3.13 | 3.08 | 0.31 | 0.29 |
| France | 6.37 | 6.92 | 0.60 | 0.61 |
| Ireland | 5.43 | 5.81 | 0.42 | 0.38 |
| Hungary | 1.27 | 2.06 | 0.36 | 0.49 |
| Netherlands | 6.62 | 6.83 | 0.51 | 0.51 |
| Poland | 1.87 | 2.04 | 0.36 | 0.40 |
| Portugal | 2.69 | 2.71 | 0.44 | 0.44 |
| Slovakia | 1.27 | 1.47 | 0.47 | 0.45 |
| United Kingdom | 5.50 | 6.34 | 0.42 | 0.44 |
| NMS average | 1.51 | 2.03 | 0.36 | 0.43 |
| „old“ EU average | 4.96 | 5.23 | 0.46 | 0.45 |

Source: OECD

¹³ Still, this value may not reflect the real influence of minimum wage system in particular countries, as there may exist also sub-minimum wage tariffs applying for the most impacted groups of workers (young, least skilled, part-time workers). These are quite common in Europe (Dolado et al., 1996).

Collective bargaining and trade unions

The role of trade unions in collective bargaining process is also a factor influencing wage formation and determining labour costs and flexibility of firms. In most of the European countries, trade unions play an important role. Their power was traditionally measured by the share of workers who were trade unions' members—trade union density. However, even if the density is rather low in some countries, it is a common practise to extend the agreements also to non-unionized workers, thus covering a large share of employees in the whole economy (e.g. France, Spain). Thus, the degree of collective bargaining coverage (share of all salary earners whose wage is actually determined by a collective agreement—legal extension of bargained wage rates to non-unionized workers) might be a more reliable indicator in terms of real economic consequences. The level of union coordination and centralization is also an important aspect. Coordination refers to ability to coordinate bargaining among various unions and employers' organizations. Centralization refers rather to the level of bargaining (firm, industry, country) and the role of the government; high degree of centralization does not necessarily have to mean close coordination.

Theory suggests that the trade unions generally tend to raise wages and thus influence unemployment. The more workers they cover, the higher this impact. This effect might be in reality offset by the extent to which unions and/or firms coordinate their wage determination¹⁴ (Nickell and Layard, 1999; OECD, 1997). Overall impact might be also lowered by greater degree of product market competition (Boeri, 2005). The estimation of total effect of trade unions on unemployment and labour market performance is not robust in most empirical studies. For summary of empirical finding see for instance OECD (1997, 2004).

Table 4 summarizes the key features of collective bargaining process in the selected European countries and the NMS. Clearly both trade union density and collective bargaining coverage are much lower in the NMS. There is also the lowest degree of bargaining centralization and coordination in the NMS with the exception of Slovakia. Both trade union density and collective bargaining coverage show higher trade union influence in “old” member countries, which might be on the other hand offset by higher degree of centralization and coordination.

¹⁴ According to Layard et al. (1991), average wages are more responsive to labour market conditions in those countries where wage bargaining is more coordinated. Higher coordination then means less rigidity in terms of lower wage pressure and reduce the negative unemployment consequences of trade union bargaining.

Table 4. Collective bargaining in the selected European countries

| | Trade union density | Collective bargaining coverage | | Collective bargaining centralisation | Collective bargaining coordination |
|-------------------------|---------------------|--------------------------------|-----------|--------------------------------------|------------------------------------|
| | 2000 | 2000 | 2004 | 1995-2000 | 1995-2000 |
| Belgium | 56 | 90 | 90 | 3 | 4 |
| Czech Republic | 27 | 25 | 27 | 1 | 1 |
| Denmark | 74 | 80 | 77 | 3 | 3 |
| Germany | 25 | 68 | 70 | 3 | 4 |
| Greece | 27 | 71 | 65 | ... | ... |
| Spain | 15 | 80 | 80 | 3 | 3 |
| France | 10 | 90 | 90 | 2 | 2 |
| Ireland | 38 | 67 | 44 | 4 | 4 |
| Italy | 35 | 80 | 90 | 2 | 3 |
| Hungary | 20 | 30 | 40 | 1 | 1 |
| Netherlands | 23 | 80 | 80 | 3 | 4 |
| Austria | 37 | 95 | 98 | 3 | 4 |
| Poland | 15 | 40 | 40 | 1 | 1 |
| Portugal | 24 | 80 | 80 | 4 | 4 |
| Slovakia | 36 | 50 | 40 | 2 | 2 |
| Finland | 76 | 90 | 90 | 5 | 5 |
| Sweden | 79 | 90 | 90 | 3 | 3 |
| United Kingdom | 31 | 30 | 40 | 1 | 1 |
| Norway | 54 | 70 | 74 | 4.5 | 4.5 |
| NMS average | 25 | 36 | 37 | 1.3 | 1.3 |
| „old“ EU average | 40 | 78 | 77 | 3.1 | 3.5 |

Source: OECD

Note: *Centralisation*: 1 = Company and plant level predominant; 2 = Combination of industry and company/plant level, with an important share of employees covered by company bargains; 3 = Industry-level predominant; 4 = Predominantly industrial bargaining, but also recurrent central-level agreements; 5 = Central-level agreements of overriding importance; *Co-ordination*: 1 = Fragmented company/plant bargaining, little or no co-ordination by upper-level associations; 2 = Fragmented industry and company-level bargaining, with little or no pattern-setting; 3 = Industry-level bargaining with irregular pattern-setting and moderate co-ordination among major bargaining actors; 4 = a) informal co-ordination of industry and firm-level bargaining by (multiple) peak associations; b) co-ordinated bargaining by peak confederations, including government-sponsored negotiations (tripartite agreements, social pacts), or government imposition of wage schedules; c) regular pattern-setting coupled with high union concentration and/or bargaining co-ordination by large firms; d) government wage arbitration; 5 = a) informal co-ordination of industry-level bargaining by an encompassing union confederation; b) co-ordinated bargaining by peak confederations or government imposition of a wage schedule/freeze, with a peace obligation.

System of labour taxation

Taxes on labour are expected to influence negatively labour markets, as taxes drive a wedge between the labour cost to the employer and take-home wage for the employee. The larger the wedge is, the more pronounced negative effect on labour market will be. In this respect, it is irrelevant whether we analyze income taxes or social security contributions, as highly redistributive nature of most social security programs separates their contributions from entitlements. Several studies confirmed this theoretical conclusion by empirical tests (Nickell, 1997), while some are rather inconclusive (Scarpetta, 1996). Daceri and Tabellini (2000) show that taxes are more significant in countries with strong trade unions

Labour taxes in the European Union are very high, the highest in the world—see table 5. Measured as percentage of GDP, taxes on labour reach 27% in Sweden, 22% in France and Belgium, more than 20% of GDP in Denmark, Germany, Austria, Slovenia and Finland. Ireland, Greece and the two Mediterranean islands (Cyprus and Malta) emerge as the low-tax countries with the labour taxes' share just above 10% of GDP.

Impact of labour taxes is, however, better measured by their microeconomic effects. This is approximated by the tax wedge. As tax systems are progressive in all EU countries¹⁵ the tax wedge differs for different income groups. For average wage earners, it reaches more than 40% in several countries, both from the NMS and “old” members groups: Poland, France, Sweden, and Belgium. Tax wedge tend to fall for lower incomes, but it remains relatively high for countries as Poland, Sweden or Spain even for workers earning less than average wage (see European Commission, 2005). In general, taxes on labour paid by both workers and employers are lower in the NMS, but the total tax wedge on labour is slightly higher here.

Table 5. Taxation in the selected European countries

| | Taxes on labour paid by employer and employee, % GDP | | Total tax wedge (%) | |
|-------------------------|--|-------------|---------------------|--------------|
| | 2000 | 2004 | 2000 | 2004 |
| Belgium | 22.3 | 21.9 | 57.1 | 55.4 |
| Czech Republic | 17.4 | 18.0 | 42.7 | 43.5 |
| Denmark | 21.8 | 20.1 | 44.3 | 41.3 |
| Germany | 21.8 | 20.1 | 53.9 | 53.3 |
| Greece | 12.6 | 12.9 | 38.4 | 38.3 |
| Spain | 13.9 | 14.1 | 38.6 | 38.7 |
| France | 21.7 | 22.2 | 49.6 | 49.8 |
| Ireland | 11.4 | 10.4 | 28.9 | 26.2 |
| Italy | 17.6 | 18.1 | 46.4 | 45.4 |
| Hungary | 18.6 | 18.6 | 52.7 | 50.3 |
| Netherlands | 18.2 | 15.9 | 39.7 | 38.6 |
| Austria | 21.5 | 21.0 | 47.3 | 47.5 |
| Poland | 14.3 | 13.1 | 43.2 | 43.3 |
| Portugal | 13.5 | .. | 37.3 | 36.8 |
| Slovakia | 16.0 | .. | 41.8 | 42.5 |
| Finland | 21.0 | 20.6 | 47.8 | 44.5 |
| Sweden | 27.8 | 26.9 | 50.1 | 48.4 |
| United Kingdom | 14.2 | 13.8 | 32.1 | 33.4 |
| Norway | 16.6 | .. | 38.6 | 38.1 |
| NMS average | 16.6 | 16.6 | 45.10 | 44.91 |
| „old“ EU average | 18.4 | 18.3 | 43.34 | 42.38 |

Source: OECD, Eurostat

Note: *Total tax wedge on labour*: The combined central and sub-central government income tax plus employee and employer social security contribution taxes, as a percentage of labour costs defined as gross wage earnings plus employer social security contributions (average wage). The tax wedge includes cash transfers.

Labour market policies

Labour market policies (LMP) may have ambiguous impact on unemployment and labour market performance. Active LMP aim at enhancing human capital and sustaining employability of their participants. The provisions may improve the efficiency of job-matching process. Although negative effects do occur (substitution effects and deadweight losses—see for instance Martin, 2000), empirical studies often find overall positive effects of these provisions on unemployment (OECD, 1993).

¹⁵ Even „flat-tax“ Slovakia has, in fact, progressive tax system due to its relatively high non-taxed minimum.

Passive LMP may on the other hand decrease the job-search intensity and motivation of unemployed to accept a job offer and lower the economic costs of unemployment, raise the employees' wage claims and thus might push up the overall unemployment. At the same time it might increase the effectiveness of matching process and improve the labour market performance. The generosity of unemployment insurance system is of particular importance. It depends mainly on benefits payment duration and their relative level compared to previous labour income, i.e. the replacement rate. The more generous the system, the larger the adverse effects (Layard et al., 1991). Negative consequences of generous unemployment insurance system and high passive LMP spending might be partly offset by suitable active LMP measures aimed at returning the unemployed back to work. Final effect of LMP is then given by the relative scope of these programmes and their features.

Table 6. Labour market policies in the selected European countries

| | Spending on active LMP (%GDP) / unemployment rate | | Spending on passive LMP (%GDP) / unemployment rate | | Unemployment insurance benefit duration (months) | | Replacement rate (%)—initial phase of unemployment | | Replacement rate (%)—long-term unemployment | |
|-------------------------|---|--------------|--|--------------------------|--|-----------|--|-----------|---|-----------|
| | 1999 | 2004 | 1999 | 2004 | 2001 | 2004 | 2001 | 2004 | 2001 | 2004 |
| Belgium | 0.159 | 0.137 | 0.275 | 0.287 | unlim. | unlim. | 63 | 63 | 47 | 52 |
| Czech Republic | 0.022 | 0.031 | 0.036 | 0.031 | 6 | 5 | 50 | 50 | 36 | 30 |
| Denmark | 0.338 | 0.333 | 0.594 | 0.484 | 60 | 48 | 64 | 61 | 61 | 59 |
| Germany | 0.165 | 0.120 | 0.268 | 0.243 | 12 | 12 | 61 | 61 | 60 | 60 |
| Greece | 0.028 ¹ | 0.016 | 0.040 ¹ | 0.043 | 12 | 12 | 45 | 48 | 0 | 0 |
| Spain | 0.081 | 0.067 | 0.112 | 0.140 | 24 | 21 | 72 | 69 | 25 | 25 |
| France | 0.130 | 0.101 | 0.168 | 0.179 | 60 | 23 | 71 | 73 | 42 | 40 |
| Ireland | 0.270 ¹ | 0.138 | 0.333 ¹ | 0.200 | 15 | 15 | 29 | 30 | 50 | 51 |
| Italy | 0.103 ¹ | 0.074 | 0.056 ¹ | 0.095 | 6 | 6 | 52 | 54 | 0 | 0 |
| Hungary | 0.057 | 0.051 | 0.080 | 0.062 | 12 | 9 | 47 | 43 | 25 | 25 |
| Netherlands | 0.513 | 0.313 | 0.716 | 0.485 | 60 | 24 | 71 | 71 | 58 | 61 |
| Austria | 0.133 | 0.125 | 0.305 | 0.290 | 10 | 9 | 55 | 55 | 51 | 51 |
| Poland | 0.033¹ | 0.007 | 0.042^{1,2} | 0.042² | 18 | 12 | 47 | 52 | 32 | 30 |
| Portugal | 0.173 ¹ | 0.104 | 0.182 ¹ | 0.196 | 30 | 24 | 78 | 78 | 24 | 25 |
| Slovakia | 0.026³ | 0.023 | 0.022³ | 0.019 | 9 | 8 | 64 | 64 | 65 | 21 |
| Finland | 0.120 | 0.111 | 0.227 | 0.235 | 25 | 23 | 61 | 60 | 51 | 49 |
| Sweden | 0.272 | 0.197 | 0.251 | 0.210 | 15 | 28 | 78 | 77 | 52 | 52 |
| United Kingdom | 0.058 | 0.111 | 0.108 | 0.062 | 6 | 6 | 45 | 45 | 45 | 45 |
| Norway | 0.253 | 0.180 | 0.147 | 0.195 | 36 | 36 | 66 | 66 | 44 | 41 |
| NMS average | 0.034 | 0.028 | 0.045 | 0.039 | 11 | 9 | 52 | 52 | 40 | 27 |
| „old“ EU average | 0.186 | 0.142 | 0.252 | 0.223 | 33 | 27 | 61 | 61 | 41 | 41 |

Source: OECD. Ministry of Economy and Labour of Poland (²); year 1998 (¹); year 2001(³).

Note: *Initial replacement rate*: net value of unemployment benefits in the initial phase of unemployment relative to average production wage of a single person, without children. *Long term replacement rate*: net value of unemployment benefits, social assistance, family and housing benefits relative to average production wage of a single person, without children; average over 60 months of unemployment.

Main characteristics of LMP systems are presented in table 6. There are very significant differences between the two groups of countries. NMS in average spend relatively small amount of resources on LMP. This spending in average represents about 0.03—0.04% GDP per 1 percentage point of unemployment in these countries; there was a slight decrease between 1999 and 2004. Among the “old” members, active labour market policies

expenditure as a share of GDP per 1 unemployment percentage point was five-times higher than in the NMS and even six-time higher in case of passive labour market policies spending.

Data also reveal differences among the countries in the duration of unemployment insurance benefits entitlement. Duration of payments was 10 months in average in the NMS, which is roughly one third compare to the “old” member countries.¹⁶ Among the NMS, the longest entitlement period may be observed in Poland, the shortest in the Czech Republic. On the other hand, variation in replacement rates is not so marked, especially in the initial stage of unemployment (roughly 50% in the NMS and 60% in “old” member countries). The long-term replacement rate fell significantly in the NMS in 2004, caused mainly by substantial decline in case of Slovakia. Consequently, the NMS average lies well below the “old” members’ average.

4. Empirical estimation of institutional barriers to the labour markets flexibility

In this chapter, we present estimates of the labour market institutions’ effects on various labour markets’ indicators. To this end, we use an econometric model inspired by recent empirical research and by economic theory set out in part 3 of this paper.

As there is only scarce data available, we constructed a panel of nineteen European countries¹⁷ and used data from years 1999 and 2004.¹⁸ Out of all the countries in the panel, fourteen are “old” member countries, one is Norway, which we classify as an old member country for purposes of this paper, and remaining four countries are the NMS. The source of the data is mainly the OECD and partly also Eurostat.

We examine the impact of institutional factors on four indicators of labour market performance (Eurostat methodology): unemployment rate (*UR*), long-term unemployment rate (*LtUR*), employment rate (*ER*) and activity rate (*AR*). In line with the previous research, the dependent variables are represented in logs. The regression coefficients are estimated using the standard random effects generalized least square estimation procedure. The regression equation has following form:

$$\ln X_{it} = \alpha + \beta_1 EPL_{it} + \beta_2 MW_{it} + \beta_3 CBC_t + \beta_4 TAX_{it} + \beta_5 ALMP_{it} + \beta_6 UBRR_{it} + \beta_7 INFL_{it} + \beta_8 LEFT_{it} + \varepsilon_{it} \quad (1),$$

¹⁶ In its effect on labour market performance this might be eventually offset by differences in social benefits system—after the unemployed lose the entitlement for the unemployment insurance benefits and are covered by other provisions of social security system.

¹⁷ Belgium, Czech Republic, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Hungary, Netherlands, Austria, Poland, Portugal, Slovakia, Finland, Sweden, United Kingdom, and Norway.

¹⁸ Or years close to these dates in case of missing data.

where X takes the form of UR , $LtUR$, ER , and AR in consequent regressions.

The independent variables and their expected effects were described in the previous section. In our regression, we used the second version of the EPL index as it covers wider spectrum of protection policies (EPL). Minimum wage (MW) is a cluster variable constructed according to minimum wage level and its relative share on median wage in the economy. The trade unions' power is represented by the collective bargaining coverage (CBC) as a more representative measure. Tax system consequences are reflected by total tax wedge on labour (TAX). Finally, to reflect the influence of labour market policies, expenditure on active LMP ($ALMP$) and initial unemployment benefits replacement rate ($UBRR$) is included. Active labour market policies expenditure is instrumented¹⁹

We use the actual rate of unemployment in our regressions, but labour market institutions affect rather the equilibrium unemployment. To reflect this, additional variable was used in the model—the change in the annual rate of inflation ($INFL$; see Nickell, 1997). This variable captures the influence of economic cycle and may be also considered an indicator of macroeconomic policy stance. Finally, unemployment level might be in reality also influenced by political preferences of governments and conflict of interest over the power resources (see for instance Korpi, 1991). To account for these political factors, one more variable was added in the regression model—the government orientation with respect to the economic policy. Variable $LEFT$ is a dummy acquiring 1 for parties defined as communist, socialist, social-democratic or left-wing, where we expect greater orientation on social issues resulting in lower unemployment.²⁰ As economic policy takes time to influence labour market performance, we use the $LEFT$ dummy with a one year lag.

The model analyzes mainly the basic correlations between the labour market performance and institutions. Its deeper explanation power is rather limited due to the lack of data on more countries and other relevant variables that might affect the dependent variables.²¹ Moreover, only four NMS are covered in the sample and therefore it is not possible to run a separate analysis for this group of countries. Only the differences in the role of institutions between the whole group of countries and the “old” member countries and its implications for the NMS were examined using the Chow test (see also Cazes and Nesporova, 2003). Regression

¹⁹ This variable is endogenous because it relates the expenditure to the actual rate of unemployment. For this reason we instrumented this variable by a new variable relating the expenditure to the average unemployment rate in 5-year period before the actual year.

²⁰ The source of the data is the World Bank's database of political institutions; for details see Keefer (2005).

estimation results are summarized in table 7. Our findings are generally in correspondence with the previous research of Cazes and Nesporova (2003) and Nickell (1997).

The first model examines role of institutions in unemployment differentials among European countries. Out of six institutional variables, only two have significant effect on unemployment differences and dynamics among European countries—tax wedge on labour and active labour market policies. While higher tax burden significantly increases the unemployment rate, active labour market policies work in the opposite direction and may offset the negative effect of taxation. None of the remaining variables is significant for explaining the development of unemployment. Therefore, our results are consistent with standard theoretical concepts.

The second model where we use long-term unemployment as a dependent variable gives similar results. Here the estimated regression coefficients for tax wedge on labour and active labour market policies are even more pronounced. Moreover, minimum wage has a moderate positive effect on the long-term unemployment (this variable was not significant for the overall unemployment).

Table 7. Regression estimation results

| | Unemployment rate | LT unemployment rate | Employment rate | Activity rate |
|---|-------------------------|-------------------------|------------------------|-------------------------|
| Constant | 1.1264 * (-0.5688) | -0.4768 (0.9534) | 4.3198 *** (0.1317) | 4.3592 (0.0980) |
| EPL index | 0.0359 (-0.1196) | 0.1297 (0.2294) | -0.0548 * (0.0294) | -0.0369 ** (0.0180) |
| Minimum wage | 0.0824 (0.0565) | 0.1803 * (0.1000) | -0.0230 * (0.0134) | -0.0165 * (0.0091) |
| Collective bargaining coverage | -0.0019 (0.0043) | -0.0064 (0.0078) | 0.0013 (0.0010) | 0.0008 (0.0007) |
| Total tax wedge on labour | 2.1675 * (1.1900) | 4.3988 * (2.0037) | -0.6917 ** (0.2761) | -0.5750 *** (0.2046) |
| Active labour market policies spending | -2.1375 *** (0.5992) | -3.1181 *** (1.1574) | 0.2221 (0.1479) | 0.0094 (0.0900) |
| Unemployment benefits initial replacement rate | 0.0038 (0.0079) | -0.0004 (0.0137) | 0.0029 (0.0019) | 0.0032 ** (0.0013) |
| Inflation (change p.p.) | 0.0094 (0.0145) | 0.0258 (0.0306) | -0.0045 (0.0037) | -0.0019 (0.0020) |
| Left-wing oriented government | -0.0711 (0.0773) | -0.1048 (0.1589) | 0.0177 (0.0196) | 0.0088 (0.0110) |
| N (countries, time): | 38 (19, 2) | 38 (19, 2) | 38 (19, 2) | 38 (19, 2) |
| R² overall: | 0.3008 | 0.1543 | 0.1027 | 0.2459 |
| R² within: | 0.5120 | 0.5551 | 0.6196 | 0.5695 |
| R² between: | 0.4990 | 0.5238 | 0.5856 | 0.5543 |

*** significant 1%, ** significant 5%, * significant 10%

Random effects generalized least squares estimation method, robust standard errors in parentheses.

Source: OECD, Eurostat, World Bank, own calculations

In the third and fourth model, explaining labour supply decisions, institutional factors proved to be more powerful. EPL, taxes on labour and minimum wage are all significant in both

²¹ These are for example the role of product market reforms (Griffith et al., 2006 or Boeri, 2006) or importance of adverse economic shocks (Blanchard, Wolfers 2000).

models. Further, unemployment benefits' initial replacement rate is significant for explaining the differences in activity rates. On the other hand, collective bargaining coverage and active LMP do not seem to have a significant effect. Stricter EPL, larger economic burden represented by the minimum wage, and higher tax wedge on labour tend to decrease both employment and activity rate. On the other hand, unemployment benefits initial replacement rate tend to raise the activity rate by increasing motivation to relying on the social system (the effect on overall unemployment is positive, although insignificant). Neither inflation nor left-wing orientation of the government proved to have a significant effect in any of the models. The effect of the trade unions collective bargaining over wages seems to be limited as well.

All our regression models explain 50-60% of the variation in the dependent variables among 19 European countries. Explanatory power of the models is higher in case of between-groups variation; the variation within countries in time is less robust. This conclusion is in line with the results of Blanchard and Wolfers (2000) who stress the importance of diverse reactions of each state's institutions to adverse economic shocks.

Due to limited data, we could not run separate regressions for "old" and "new" EU member countries. Therefore, we tested hypothesis of stability of the regression coefficients between the whole sample of nineteen countries and the sub-sample of fifteen "old" members for any of the dependent variables. This was done by Chow tests for stability of estimated coefficients²² for each of the dependent variables. The tests' results differ for the unemployment and labour supply models. As far as unemployment is concerned, the tests have not rejected the hypothesis of stability of coefficients and we cannot prove different behaviour of the NMS group on 5% significance level.²³ On the other hand, in both employment and activity rate models we can reject the hypothesis of stability of regression coefficients on 5% significance level.²⁴ In other words, NMS and "old" Europe exhibited differing patterns of labour markets reactions to various institutional settings in examined

²² We used a modified version of the test hypotheses and statistics, because number of observations in the NMS group is smaller than the number of parameters, $n_{NMS} < k$, and thus we can not use the standard methods in this case. We test the hypothesis $H_0: E(y | X; \beta_{OE}) = E(y | X; \beta_{NMS})$. This is done by calculating the statistic

$$F = \frac{\frac{SSR_T - SSR_{OE}}{n_{NMS}}}{\frac{SSR_{OE}}{n_{OE} - k}} \approx F(n_{NMS}, n_{OE} - k).$$

²³ The test statistic reached 2.40 for total unemployment and 1.91 for long-term unemployment. The corresponding critical value of F distribution d.f. 8, 21 at 5% level of significance stood at 2.42.

²⁴ The test statistic reached 3.77 for employment and 4.07 for activity rate. The corresponding critical value of F distribution is the same as above.

period. However, due to limited data available, we were not able to analyze the new member states' patterns of behaviour separately.

5. Conclusions

This paper discussed the role and impact of labour market institutions on the performance of labour markets. Our discussion indicated that the relationship is not straightforward nor statistically very robust. Institutions are difficult to define, measure, compare between countries, and their effect may change over time. The paper, nevertheless, analyses labour market institutions in nineteen European countries and finds that they do have some effect on major labour market indicators. We found that the labour markets in “new” member states enjoy more liberal employment protection legislation and lower minimum wages. Also, trade unions seem to have less say in the NMS: both trade union density and collective bargaining coverage are significantly lower in the NMS as well as degree of bargaining centralization and coordination. Both workers and employers pay lower taxes on labour in the NMS, although total tax wedge on labour is slightly higher here. The NMS spend relatively less on both active and passive labour market policies and unemployment benefits replacement rates are slightly lower. However, the differences between the NMS and old Europe are slowly diminishing in time.

Our econometric analysis suggests that two institutional factors significantly influence unemployment and long term unemployment: total tax wedge on labour and active labour market policies. While higher tax burden significantly increases the unemployment rate, active labour market policies work in the opposite direction and may offset the negative effect of taxation. Our model proved to be more powerful in explaining employment and activity rate. Stricter employment protection legislation, higher tax wedge and minimum wage are likely to reduce both employment and activity rate; unemployment benefits replacement rate tend to increase the activity. On the other hand, collective bargaining over wages and political orientation of the government do not have significant effect on labour markets performance.

When analyzing the patterns of effect of institutional factors on labour market developments in the NMS and “old” member countries, we were not able to prove different behaviour of the NMS group in unemployment models. On the other hand, as far as employment and activity rate are concerned, significant differences between the two groups of countries seem to persist. However, due to limited data available, we were not able to analyze the NMS behaviour in detail and further research using a broader data sample is needed. We may speculate that further European integration will lead to continuing convergence of European

labour markets and thus that the NMS group will become even more like the “old” member countries, at least in labour market institutions’ effects.

Our results indicate that European countries should concentrate on lowering current high taxes on labour that discourage formal labour market contracts and lead to higher unemployment and lower activity rates. Similarly, restrictive employment protection laws should be relaxed as to make process of hiring and firing more market friendly. This would increase activity rate and employment in most European states. Large economic burden represented by the minimum wage in many countries should be relaxed in order to increase the motivation of firms to hire low-wage workers and decrease the unemployment. Social goals of the minimum wage should be transferred to other social policy instruments. Last, active labour market policies seem to be effective in pulling the unemployment down and thus compensate for negative effects of other institutions.

References

- Baker, D., Howell, D., and Schmitt, J. (2005): “*Labour market institutions and unemployment*”. In: Howell, D.R. (ed.), “*Fighting Unemployment: The Limits of Free Market Orthodoxy*”. Oxford University Press, Oxford, UK.
- Blanchard, O.; Wolfers, J. (2000): “The Role of Shocks and Institutions in the Rise of European Unemployment: The Aggregate Evidence”. *The Economic Journal*, Vol. 110, No. 462, Conference Papers, pp. C1-C33.
- Blanchflower, D.G. (2001): “Unemployment, well-being, and wage curves in Eastern and Central Europe”. *Journal of the Japanese and International Economies*, pp. 364-402.
- Boeri, T. (2005): “*Reforming Labor and Product Markets: Some Lessons from Two Decades of Experiments in Europe*”. Working paper No 05/97. IMF.
- Brandt, N.; Burniaux, J.-M.; Duval, R. (2005): “*Assessing the OECD Jobs Strategy: Past Developments and Reforms*”. OECD Economics Department Working Paper No. 429.
- Brown, C., Gilroy, C., Kohen, A. (1982): “The Effect of the Minimum Wage on Employment and Unemployment”. *Journal of Economic Literature*, Vol. 20, No. 2, pp. 487-528.
- Cahuc, P., Michel, P. (1996): “Minimum Wage, Unemployment and Growth”. *European Economic Review*, pp. 1463-1482.
- Calmfors, L., Drifill, J. (1988): “Bargaining Structure, Corporatism and Macroeconomic Performance”. *Economic Policy*, pp. 14-61.
- Cazes, S. (2002): “*Do labour market institutions matter in transition economies? An analysis of labour market flexibility in the late nineties*”. ILO Discussion Paper DP/140/2002. Geneva, ILO.
- Cazes, S.; Nesporova, A. (2003): “*Labour Markets in Transition: Balancing flexibility and security in Central and Eastern Europe*”. Geneva, ILO.
- Daveri, F., Tabellini, G. (2000): “*Unemployment, growth and taxation in industrial countries*”. *Economic Policy*, CEPR, CES, MSH, Vol. 15, No. 30, pp. 47-104.
- Dolado, J., Kramarz, F., Machin, S., Manning, A., Margolis, D., Teulings, C. (1996): “The Economic Impact of Minimum Wages in Europe”. *Economic Policy*. Vol. 23, pp.317-372.

- European Commission (2005): “*Second Implementation Report on the Internal Market Strategy 2003-2006*”. Brussels, EU.
- Flek, V.; Vecernik, J. (2005): “The Labor Market in the Czech Republic: Trends, Policies, and Attitudes”. *Czech Journal of Economics and Finance*, Vol. 55, Issue 1-2, pp. 5-24.
- Freeman, R. B. (2007): “*Labour Market Institutions Across The World*”. NBER Working Paper No. 13242. NBER, Cambridge, Massachusetts.
- Freeman, R. B., Lazear, E.P. (1995): “*An Economic Analysis of Works Councils*”. In Rogers, J. (ed.): “*Works Councils: Consultations, Representations, Cooperation*”. Chicago, University of Chicago Press, pp. 27-50.
- Griffith, R.; Harrison, R.; Macartney, G. (2006): “*Product Market Reforms, Labour Market Institutions and Unemployment*”. CEPR Discussion Paper No. 5599. London, CEPR.
- Heckman, J. J. (2007): “Comments on *Are Protective Labor Market Institutions at the Root of Unemployment? A Critical Review of the Evidence* by David Howell, Dean Baker, Andrew Glyn and John Schmitt”. *Capitalism and Society*. Vol. 2, Issue 1, art. 5.
- ILO (2001): “*Changing Labour Markets in Europe The role of institutions and policies*”. Geneva, ILO.
- Keefer, P. (2005): “*DPI2004 Database of Political Institutions: Changes and Variables Definitions*”. World Bank, Washington.
- Korpi, W. (1991): “Political and Economic Explanations for Unemployment: A Cross-National and Long-Term Analysis”. *British Journal of Political Science*, Vol. 21, No.3, pp. 315-348.
- Layard, R., Nickell, S., Jackman, R. (1991): “*Unemployment: Macroeconomic performance and the labour market*”. Oxford. Oxford University Press.
- Lechner, M.; Wunsch, C. (2006): “*Active Labour Market Policy in East Germany*”. University of St.Gallen Discussion Paper 2006/24.
- Lindbeck, A. (1996): “*Incentives in the Welfare State—lessons for Would-be Welfare States*”. Institute for International Economic Studies, Stockholm.
- Manning, A. (1995): “How Do We Know That Real Wages Are Too High?” *Quarterly Journal of Economics*, Vol. 110, No. 4. pp. 1111-1125.
- Martin, J. (2000): “*What Works among Active Labour Market Policies: Evidence from OECD Countries' Experiences*”. OECD Economic Studies No.30. Paris, OECD.
- Nesporova, A. (2002): “*Why unemployment remains so high in Central and Eastern Europe*”. ILO Employment Paper, No. 43/2002. Geneva, ILO.
- Nickell, S. (1997): “Unemployment and Labour Market Rigidities: Europe versus North America”. *The Journal of Economic Perspectives*, Vol. 11, No. 3, pp. 55-74.
- Nickell, S.; Layard, R. (1999): “Labour Market Institutions and Economic Performance”. In: Ashenfelter, O.; Card, D. (eds.): “*Handbook of Labour Economics*”. Vol. 3, Chap. 46, pp. 3029-3084. Amsterdam, Elsevier Science/North-Holland.
- Nickell, S.J., Nunziata, L.; Ochel, W. (2005): “Unemployment in the OECD since the 1960's: What Do We Know?” *The Economic Journal*, pp. 1-27.
- OECD (1993): “*Employment Outlook*”. Paris, OECD.
- OECD (1994): “*The OECD Jobs Study - Facts, Analysis, Strategies*”. Paris, OECD.
- OECD (1998): “*Employment Outlook*”. Paris, OECD.
- OECD (1999): “*OECD Economic Outlook*”. Paris, OECD.
- OECD (2004): “*Employment Outlook*”. Paris, OECD.
- Olson, M. (1990): “*How Bright Are the Northern Lights? Crafoord Lectures.*” Lund, Sweden, Institute of Economic Research.
- Rebitzer, J., Taylor, L. (1995): “The Consequences of Minimum Wage Laws: Some New Theoretical Ideas”. *Journal of Public Economics*, February 1995, pp. 245-255.

- Riboud, M. et al. (2001): "*Does Eurosclerosis Matter? Institutional Reform and Labor Market Performance in Central and Eastern European Countries in the 1990s*". Washington, World Bank
- Saint-Paul, G. (1996): "*Understanding Labour Market Institutions: A Political Economy Perspective*". CEPR Discussion Paper, No. 1438. London, CEPR.
- Scarpetta, S. (1996): "*Assessing the role of labour market policies and institutional settings on unemployment: a cross country study*". OECD Economic Studies, No. 26, pp. 43-97.
- Stigler, G. (1946): "The Economics of Minimum Wage Legislation". *American Economic Review*, Vol. 36, pp. 535-543.
- Teulings, C., Hartog, J. (1998): "*Corporatism or Competition?*" Cambridge University Press, Cambridge UK.

CESifo Working Paper Series

for full list see www.cesifo-group.org/wp

(address: Poschingerstr. 5, 81679 Munich, Germany, office@cesifo.de)

- 2361 Francisco Alvarez-Cuadrado and Ngo Van Long, A Permanent Income Version of the Relative Income Hypothesis, July 2008
- 2362 Gabrielle Demange, Robert Fenge and Silke Uebelmesser, Financing Higher Education and Labor Mobility, July 2008
- 2363 Alessandra Casarico and Alessandro Sommacal, Labor Income Taxation, Human Capital and Growth: The Role of Child Care, August 2008
- 2364 Antonis Adam, Manthos D. Delis and Pantelis Kammas, Fiscal Decentralization and Public Sector Efficiency: Evidence from OECD Countries, August 2008
- 2365 Stefan Voigt, The (Economic) Effects of Lay Participation in Courts – A Cross-Country Analysis, August 2008
- 2366 Tobias König and Andreas Wagener, (Post-)Materialist Attitudes and the Mix of Capital and Labour Taxation, August 2008
- 2367 Ximing Wu, Andreas Savvides and Thanasis Stengos, The Global Joint Distribution of Income and Health, August 2008
- 2368 Alejandro Donado and Klaus Wälde, Trade Unions Go Global!, August 2008
- 2369 Hans Gersbach and Hans Haller, Exit and Power in General Equilibrium, August 2008
- 2370 Jan P.A.M. Jacobs and Jan-Egbert Sturm, The Information Content of KOF Indicators on Swiss Current Account Data Revisions, August 2008
- 2371 Oliver Hülsewig, Johannes Mayr and Timo Wollmershäuser, Forecasting Euro Area Real GDP: Optimal Pooling of Information, August 2008
- 2372 Tigran Poghosyan and Jakob de Haan, Determinants of Cross-Border Bank Acquisitions in Transition Economies: A Latent Class Analysis, August 2008
- 2373 David Anthoff and Richard S.J. Tol, On International Equity Weights and National Decision Making on Climate Change, August 2008
- 2374 Florian Englmaier and Arno Schmöller, Reserve Price Formation in Online Auctions, August 2008
- 2375 Karl Farmer, Birgit Friedl and Andreas Rainer, Effects of Unilateral Climate Policy on Terms of Trade, Capital Accumulation, and Welfare in a World Economy, August 2008
- 2376 Monika Büttler, Stefan Staubli and Maria Grazia Zito, The Role of the Annuity's Value on the Decision (Not) to Annuitize: Evidence from a Large Policy Change, August 2008

- 2377 Inmaculada Martínez-Zarzoso, The Impact of Urbanization on CO₂ Emissions: Evidence from Developing Countries, August 2008
- 2378 Brian Roberson and Dmitriy Kvasov, The Non-Constant-Sum Colonel Blotto Game, August 2008
- 2379 Ian Dew-Becker, How Much Sunlight Does it Take to Disinfect a Boardroom? A Short History of Executive Compensation Regulation, August 2008
- 2380 Cécile Aubert, Oliver Falck and Stephan Heblich, Subsidizing National Champions: An Evolutionary Perspective, August 2008
- 2381 Sebastian Buhai, Miguel Portela, Coen Teulings and Aico van Vuuren, Returns to Tenure or Seniority?, August 2008
- 2382 Erkki Koskela and Jan König, Flexible Outsourcing, Profit Sharing and Equilibrium Unemployment, August 2008
- 2383 Torberg Falch and Justina AV Fischer, Does a Generous Welfare State Crowd out Student Achievement? Panel Data Evidence from International Student Tests, September 2008
- 2384 Pedro Gomes and François Pouget, Corporate Tax Competition and the Decline of Public Investment, September 2008
- 2385 Marko Koethenbueger, How Do Local Governments Decide on Public Policy in Fiscal Federalism? Tax vs. Expenditure Optimization, September 2008
- 2386 Ronald McKinnon and Gunther Schnabl, China's Exchange Rate Impasse and the Weak U.S. Dollar, September 2008
- 2387 Yan-Leung Cheung, Yin-Wong Cheung and Alan T.K. Wan, A High-Low Model of Daily Stock Price Ranges, September 2008
- 2388 Louis Eeckhoudt and Harris Schlesinger, Changes in Risk and the Demand for Saving, September 2008
- 2389 Carsten Hefeker and Blandine Zimmer, Uncertainty and Fiscal Policy in an Asymmetric Monetary Union, September 2008
- 2390 Jay Pil Choi and Byung-Cheol Kim, Net Neutrality and Investment Incentives, September 2008
- 2391 Marcel Gérard, Financing Bologna, the Internationally Mobile Students in European Higher Education, September 2008
- 2392 Annette Alstadsæter and Knut Reidar Wangen, Corporations' Choice of Tax Regime when Transition Costs are Small and Income Shifting Potential is Large, September 2008

- 2393 António Afonso and Christophe Rault, 3-Step Analysis of Public Finances Sustainability: the Case of the European Union, September 2008
- 2394 Betsey Stevenson and Justin Wolfers, Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox, September 2008
- 2395 Bernhard Eckwert and Itzhak Zilcha, Private Investment in Higher Education: Comparing Alternative Funding Schemes, September 2008
- 2396 Øystein Foros, Hans Jarle Kind and Jan Yngve Sand, Slotting Allowances and Manufacturers' Retail Sales Effort, September 2008
- 2397 Mohammad Reza Farzanegan, Illegal Trade in the Iranian Economy: Evidence from a Structural Model, September 2008
- 2398 Olivier Bos, Charity Auctions for the Happy Few, September 2008
- 2399 Robert S. Chirinko and Debdulal Mallick, The Marginal Product of Capital: A Persistent International Puzzle, September 2008
- 2400 Ben D'Exelle and Arno Riedl, Elite Capture, Political Voice and Exclusion from Aid: An Experimental Study, September 2008
- 2401 Torben M. Andersen and Joydeep Bhattacharya, On Myopia as Rationale for Social Security, September 2008
- 2402 Fabienne Llense, French CEO Compensations: What is the Cost of a Mandatory Upper Limit?, September 2008
- 2403 Valentina Bosetti, Carlo Carraro, Alessandra Sgobbi and Massimo Tavoni, Delayed Action and Uncertain Targets. How Much Will Climate Policy Cost?, September 2008
- 2404 Robert G. Chambers, Rolf Färe, Shawna Grosskopf and Michael Vardanyan, Generalized Quadratic Revenue Functions, September 2008
- 2405 Leonidas Enrique de la Rosa, Overconfidence in a Career-Concerns Setting, September 2008
- 2406 Marcus Drometer and Johannes Rincke, The Design of Political Institutions: Electoral Competition and the Choice of Ballot Access Restrictions in the United States, September 2008
- 2407 Markku Lanne and Helmut Lütkepohl, Stock Prices and Economic Fluctuations: A Markov Switching Structural Vector Autoregressive Analysis, September 2008
- 2408 Thomas L. Brewer, International Energy Technology Transfers for Climate Change Mitigations, September 2008
- 2409 Alexander Kemnitz, Native Welfare Losses from High Skilled Immigration, September 2008

- 2410 Xavier Vives, Strategic Supply Function Competition with Private Information, September 2008
- 2411 Fabio Padovano and Roberto Ricciuti, The Political Competition-Economic Performance Puzzle: Evidence from the OECD Countries and the Italian Regions, September 2008
- 2412 Joan Costa-Font and Mireia Jofre-Bonet, Body Image and Food Disorders: Evidence from a Sample of European Women, September 2008
- 2413 Thorsten Upmann, Labour Unions – To Unite or to Separate?, October 2008
- 2414 Sascha O. Becker and Ludger Woessmann, Luther and the Girls: Religious Denomination and the Female Education Gap in 19th Century Prussia, October 2008
- 2415 Florian Englmaier and Stephen Leider, Contractual and Organizational Structure with Reciprocal Agents, October 2008
- 2416 Vittorio Daniele and Ugo Marani, Organized Crime and Foreign Direct Investment: The Italian Case, October 2008
- 2417 Valentina Bosetti, Carlo Carraro, Alessandra Sgobbi and Massimo Tavoni, Modelling Economic Impacts of Alternative International Climate Policy Architectures. A Quantitative and Comparative Assessment of Architectures for Agreement, October 2008
- 2418 Paul De Grauwe, Animal Spirits and Monetary Policy, October 2008
- 2419 Guglielmo Maria Caporale, Christophe Rault, Robert Sova and Anamaria Sova, On the Bilateral Trade Effects of Free Trade Agreements between the EU-15 and the CEEC-4 Countries, October 2008
- 2420 Yin-Wong Cheung and Daniel Friedman, Speculative Attacks: A Laboratory Study in Continuous Time, October 2008
- 2421 Kamila Fialová and Ondřej Schneider, Labour Market Institutions and their Effect on Labour Market Performance in the New EU Member Countries, October 2008